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U. S. Department of Agriculture

WEEKLY STATION REPORTS

OF THE DIVISION OF

DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

46148

MAY 3 1941

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REPORT FOR WEEK ENDING MAY 3, 1941.

HAVRE:

The mean temperature was 8° above the average for the week, no precipitation occurred, and wind movement was only moderate. The sky was overcast with a smoke haze on three days, caused by forest fires in Alberta.

Work in the experimental field consisted of planting wheat and barley varieties, staking and seeding nurseries, making certain dates of seeding, and planting foundation seed. A small field was rod weeded and seeded to Cumberland red clover, and another tract was cultivated and seeded to A-136 wilt resistant alfalfa. Even germination has been observed on all D.L.A. rotations.

About two-thirds of the alfalfa fields were irrigated. The summerfallow strips in the contour field were duckfooted, as well as the strips in the west field. The trees about the grounds were irrigated with the pump irrigation system. Mr. C. S. Noble was here during the week, assembling and starting operations with a Noble blade which will be used in the cooperative project with the Soil Conservation Service.

The calves and yearlings that were on record of performance tests this past winter were scored and turned out on pasture. The calves have done much better this year than last, making considerably larger winter gains. In addition, they weighed more last fall than the preceding fall. The yearlings wintered very well but didn't show as much improvement as the calves.

The concrete work was completed for the livestock dipping vat, as well as other W.P.A. work on the grounds improvement and office renovation project.

Maximum temperature, 79°; minimum, 37°; precipitation, none.

MOCCASIN:

Precipitation of 0.02 inch was recorded on one day during the week. Temperatures were high and conditions favorable for field work.

Rotation plots, bulk fields, and cereal projects were worked, and seedings of the Cereal spring wheat, oats, and barley varieties and the cereal nurseries were completed. The D.L.A. plots have been staked and, weather permitting, seeding will begin during the first part of next week.

The steers on crested wheatgrass pasture have abundant feed. The bromegrass pasture is noticeably slow in starting this year, but with the higher temperatures it no doubt will respond quickly. It is hoped that the remaining two groups of steers can be placed in their respective summer pastures during the coming week.

April with 1.07 inches of precipitation was but 0.08 inch below normal for that month. No month to date in 1941 has equaled the 32-year station average, but conditions temporarily are considered fairly good. On May 1 the station lacked 1.49 inches precipitation to be normal for the first four months of the year. April, however, was quite normal in regard to mean temperature and average daily wind velocity.

Official visitors during the week included Dr. R. H. Bamberg and Mr. Orlie Smith of the Division of Cereal Crops from Bozeman.

Maximum temperature, 72°; minimum, 35°; precipitation 0.02 inch.

Daily maximum and mean temperatures of the last week were the highest so far this spring, and all crops responded to the favorable growing conditions with a marked increase in development. Spring-sown small grains and grasses have all come up on the earlier seedings and stands appear to be excellent. Winter grains are tillering heavily.

Many winter plots are so infested with weeds that it is doubtful if the grains can survive the competition. Although the continuous cropping and stubbling-in experiments have the most weeds, infestation in other plots is also relatively heavy. This situation appears to be general in this locality, and some winter wheat acreages have already been plowed up or cultivated and resown to spring grain. Downy bromegrass is the weed most prevalent in the fields of winter wheat this spring.

Maximum temperature, 79°; minimum, 35°; precipitation, none.
Precipitation for April 1941, 2.03 in., average, 1.20 in.

SHERIDAN:

Favorable weather for field work and for crop growth prevailed over the entire week. While there were heavy showers over this section generally, there was no rain of any consequence at the station. All seedings of grain have emerged, and crop growth generally was rapid.

Plowing for late crops was started the 28th and was completed today. Plots in the rotations and the other heavier soils on the station were harrowed twice after plowing, with the harrow heavily weighted, and land worked down in fair condition. The first cultivation for land to be stubbled in also was completed.

A total of 4.57 inches of rain was received in April, slightly more than twice the average for the month. All except about a quarter of an inch fell in sufficient quantity at one time to penetrate the soil and be of benefit for crop growth. This was slightly greater than the April precipitation last year. High winds were frequent during the month, but total wind movement was slightly below the average for April.

Mr. Wayne Austin arrived this morning to supervise the seeding of grasses for the Soil Conservation Service.

Maximum temperature, 75°; minimum, 36°; precipitation, 0.08 inch.

DICKINSON:

Rain on six days of the week delayed field work to some extent. This came mostly in small showers with the heaviest, 0.57 inch, yesterday evening. Light to severe hail damage resulted in some localities. Higher temperatures resulted in rapid development of vegetation.

Wheat, oats, and barley plots on the rotations now have excellent stands a little over a week earlier than in 1940.

Flax was seeded on the rotations May 2. Crested wheatgrass sod plowed with a breaker bottom, double disked, and harrowed made an excellent seedbed for the flax on Rot. 12 (deferred).

Several varieties of apple, crab, and plum were planted. Some of these replace old trees of the same variety planted in 1923 and which were removed this spring or earlier. Several of the trees which are left have only a very thin layer alive with the central part of the branches and trunk dead and in various stages of decay. A twister during the summer could easily break them.

DICKINSON, contd.:

Increase blocks of Pilot 13 wheat and Iogold oats were seeded. Maximum temperature, 78°; minimum, 41°; precipitation 1.30 inches. Precipitation in April 2.05 inches. Total January 1 to April 30, 1941, was 2.90 inches, just normal for the period.

MANDAN: Arboriculture:

Four 8-row shelterbelts have been set out for research purposes. They consist of one row each of eight species from which it is expected data can be secured which are not available in the older series. A number of spruce, ponderosa pine, and redcedar receiving different treatments have been planted for testing establishment methods. Hedges have been planted on two contour strips in Field P to study possible snow accumulation and the influence such plantings may have on various farm crops. Lining out of coniferous seedlings commenced the latter part of the week.

Horticulture:

Hardwood currant and gooseberry cuttings were planted during the week, while grape cuttings still remain in the greenhouse. The grape cuttings are slow in showing signs of root formation or callosing. Pyrus baccata seed was also planted during the week. Thistles have been picked up and burned to clear the land for cultivating. At this time it does not appear that winter injury has been severe.

Nineteen varieties of new hardy roses were received the early part of the week and planted in test plots on the grounds. They include 9 Sub-zero Hybrid Teas, 5 Sub-zero Climbers, all Wichuraiana hybrids, 4 large flowered Floribunda hybrids, and one Setigera hybrid. All these are claimed to be of greater degree of hardiness than older varieties of hybrid teas and climbers. The warm weather of the last few days has brought vegetation along with a rush. Prunus armeniaca is in full bloom, and most of the other ornamental shrubs are leafing out well. Tulips are up with a fair stand. They apparently rooted rather poorly last fall. Asparagus shot up over night and the first cutting was made May 3.

Agronomy:

Wheat came up during the week to a good stand. The crop was seeded earlier in 1940 but it was up sooner this year. Crested wheatgrass made a rapid growth. It is now ready for grazing in the pastures.

Maximum temperature, 83°; minimum, 49°; precipitation, 0.20 inch.

BELLE FOURCHE:

The weather was warm and cloudy, and showers were received every day. A heavy rain of approximately 0.80 inch precipitation, and two additional showers occurred on April 28. The total precipitation for the day was 1.07 inches, but 0.50 inch of this amount was recorded in little over an hour, and considerable runoff took place. The total precipitation for April was 5.54 inches, which is practically 4 inches above normal for the month. The previous largest amount received in April was 3.92 inches, in 1927. The total precipitation for the year to date is 6.39 inches, which is the greatest of record and more than double the average for the 4-month period.

The abundance of moisture and warm weather has enabled all vegetation to make an exceptionally rapid growth. Hay and pasture crops have made phenomenal progress. Grass on many native pastures is more than 6 inches high, and alfalfa throughout the irrigation

[illegible] 12 inches in height, and that on dry land is 6 to 8 inches tall. Crops seeded on rotation plots last week are coming up. Weeds and volunteer grain are also obtaining an exceptionally good start. The continued wet weather is seriously interfering with field work, and seeding operations generally are now about two weeks later than usual. The soggy condition of grain stubble land precludes possibility of plowing gumbo soil for corn for some time.

Visitors included Director I. B. Johnson, South Dakota Experiment Station, Brookings; Paul Evans and P. L. Keene, Rapid City and Sturgis, South Dakota; and a party of 12 civil engineer students and instructors from North Dakota State College.

Maximum temperature, 80°; minimum, 43°; precipitation, 1.56 inches.

ARCHER:

The weather during the week was cool with precipitation recorded every day. There were only six days during April without precipitation, the total being 4.22 inches. The total during the past week was 1.39 inches.

These conditions were not favorable for field operations. Grasses and weeds are making a good growth. Trees and shrubs are coming into leaf. Winter cereals are in excellent condition. The SCS grass seedings are emerging. The sheep to be used in the SCS pasture experiment were weighed and turned into the pastures May 1. The dairy cattle were also turned into pastures May 1.

Maximum temperature, 68°; minimum, 35°; precipitation, 1.39 inches.

NORTH PLATTE:

Temperatures were in general higher this week than for any period so far this spring. The warmer weather following the good rains of April has resulted in a vigorous growth of small grains, grass, and weeds. The stands on the plots seeded to grass and sweetclover this spring are very good. This has been the first spring since 1935 that weather conditions have favored grass seeding. The alfalfa plots were reseeded early in the week because of poor emergence from the first seeding. The alleys have been cultivated and the roadways which are subject to washing have been prepared for seeding to grass. Soil sampling was completed this week. Preparation for corn planting is under way.

The annual spring feeders' day was held on May 3 with an attendance of 300 to 400 farmers and ranchers.

Maximum temperature, 74°; minimum, 42°; precipitation 0.50 inch. Precipitation for April 4.13 inches, or 2.06 inches above normal. Precipitation since January 1, 1.59 inches above normal. A 0.50 inch rain was recorded Tuesday.

AKRON:

Mostly rain over the week and very little field work possible. Manure was scattered over the winter wheat of Rot. 269-1. The proso stubble was duckfoot cultivated, but rain came before the first date of variety beans could be planted.

Winter and spring grains continue to make growth progress. Winter rye is beginning to joint and will be handled as indicated early next week, weather permitting. Cutworms continue to work in spots on the spring grains, and it is hoped their damage is merely that of pasturing.

April passed with 2.60 inches of precipitation, the heaviest

AKRON, contd.:
since 1935 and the tenth heaviest over the period back to 1909. More than an inch fell the night of May 1 which caused some minor runoff from bare surfaces. Cloudiness the remainder of the week prevented the drying of the surface.

Maximum temperature, 72°; minimum, 40°; precipitation, 1.74 inches.

COLBY:

This was a wet, cool week with precipitation recorded every day. In this vicinity all the moisture fell in easy, misty showers, but in some localities throughout the county very heavy rains fell. No field work was possible.

Winter wheat continues to make rapid growth. It is now about 16 inches high on most of the plots and has a very dark green color. It is stooling very heavily, especially where the stand is thin. Many farmers are still pasturing it with cattle. The spring small grains seem to have recovered from the effects of the freezes of two weeks ago, but they are making only slow growth. Thistles, which came up thick in nearly all stubble fields, are not very thrifty. The pastures are a luxurious green. Buffalo, gramma, weatern wheat, and other grasses are getting a good start this spring. Many pastures are weedy, but many are much freer of weeds than they have been in years. Cactus in the station pasture has been severely damaged by insect larvae.

Maximum temperature, 74°; minimum, 43°; precipitation 0.81 inch. Precipitation for April, 3.93 inches; 54-year average, 2.04 inches. Precipitation, January 1 to April 30, 5.93 inches; 54-year average, 3.81 inches.

HAYS:

Cloudy weather most of the time and showers three days during the week have further delayed urgently needed tillage work. The surface foot of soil is still sticky-wet. Rye for green manure has not yet been plowed under. It is now heading. Winter wheat continues making a heavy, leafy growth. The wheat is consuming so much of the water, however, it is doubtful if as much reserve moisture is being stored under the wheat as is generally believed.

Rye and wheat lodged badly during the occurence of a 0.09 inch shower yesterday, but most of the growth is rising today. Barley, oats, spring wheat, and peas are making some growth but show need of sunshine.

Maximum temperature, 72°; minimum, 49°; precipitation, 1.04 inches.

GARDEN CITY:

Rains this week totaling 2.14 inches have delayed the May 1 tillage work. If additional precipitation is not received, it will be several days before the fields are dry enough to work. Young thistles are growing rapidly.

Wheat looks excellent with an over-abundance of top growth and a plenteous supply of soil moisture for the present. There have been a few reports of rust but have observed none on the station.

The rains the past week have settled the plots previously tilled and put them in excellent shape for additional working as weed growth comes on.

Winter rye for green manure is heading and will be plowed under as soon as the plots become dry enough to work.

GARDEN CITY, contd.:

Field work outside of trimming plots was impossible because of the weather.

Maximum temperature, 71°; minimum, 47°; precipitation, 2.14 inches. Precipitation during April, 2.01 inches; average for month 1.59 inches. Total to date 4.59 inches; long time average 3.33 inches.

TUCUMCARI:

Rain on eleven of the past thirteen days, totaling 4.01 inches, has prevented field work of any sort the past two weeks. The total precipitation in April was 2.35 inches, only 1 inch above normal for the month. However, in May to date 2.11 inches has been received. Total for the year to date is 7.92 inches, or the highest of any year on record for this period.

Very little runoff occurred until yesterday and today, when precipitation came too fast for the soil to take it up. The weather has been cool and cloudy in those rare periods when rain was not falling.

Range prospects are excellent; row crop prospects will be good if fields dry so planting can be performed; wheat on the Plains should make bumper yields, where worm injury or soil blowing following late emergence did not destroy the crop. Possibly half the seeded acreage has been destroyed: the balance should average better than double than normal yield.

Maximum temperature, 72°; minimum, 46°.

DALHART:

During the past week 4.17 inches of rain has fallen; some rainfall was recorded for each day. With the exception of the rainfall during the night of the 1st there has been very little run-off. This rainy period has extended through the past 11 days. There have been 4.96 inches during this 11-day period. The rainfall for the year to this date now amounts to 8.68 inches, which makes this the wettest similar period on record. March rainfall amounted to 2.18 inches; this was the wettest March since 1929. April rainfall amounted to 2.71 inches; this was the wettest April since 1926. The May rainfall (only 2 days) now amounts to 3.18 inches; this is well above the average for the entire month of May.

Wet weather jobs have largely occupied the station force during this week. The principal tasks for the week were road repairing, repairing the station part of the telephone line, and calibrating planter for the sorghum variety planting and grass planting.

The temperatures remain moderately cool. The mean temperature for April was not far from the average mean. The average minimum for the month was higher than average, while the average maximum was lower than the average.

Maximum temperature, 72°; minimum, 44°; precipitation, 4.17 inches.

BIG SPRING:

There were only two days during the past week when any field work could be accomplished, the rest of the time it was either misting or raining.

Some cotton varieties planted about the middle of April have sprouted but seem to be making no effort towards emergence. The soil and weather have been too cold to encourage much plant growth. Weeds, however, seem to be enjoying these conditions, as they are making a rapid growth.

BIG SPRING, contd.:

Station work has consisted of knifing increase listed fields, building fence, and treating cotton seed with Ceresan.

Maximum temperature, 80°; minimum, 53°; precipitation, 2.61 inches.

LAWTON:

Five rains during the past week, amounting to 2 inches, brought the April total to 4.0 inches and provided a good start on the May records. None of the rains were large, but the ground is saturated, and cloudy, threatening weather permitted but little drying on the surface. Temperatures ranged from 56° to 78°, and a low wind velocity prevailed.

Sorghums that were planted April 25 and 26 will likely emerge with difficulty, because of the compacted surface that now exists.

Most varieties of wheat are beginning to head, but there is no heading in the rotation plots as yet. The rank growth of straw continues, and early Blackhull as well as a few other varieties now stand at 40 inches, having gained 10 inches in height the past week.

The mortality of chinch bugs has been quite noticeable the past few days. This loss in population is attributed to the fungus disease which has developed under favorable weather conditions.

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REPORT FOR THE WEEK ENDING MAY 10, 1941.

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HAVRE:

Cloudy skies and cool temperatures prevailed during the greater part of the week. Wind movement on the 2-foot anemometer averaged 19.5 miles per hour on Monday, filling the air with a thick dust haze which continued until Wednesday. Freezing temperatures occurred on two nights.

Activities in the experimental field consisted of cultivating the grass nurseries and the corn nursery ground. A date of seeding corn and sorgo was made, and sunflowers were planted in the corn and sunflower rotations. The first sampling of soil moisture was taken. Most plats appeared to have good moisture through the top 18 inches, whereas the next 18 inches were quite dry. As a result of the strong winds without any added precipitation, range conditions are not nearly so good as they were. New seedings of crested wheatgrass in particular are beginning to suffer.

The farm alfalfa fields were irrigated, and alfalfa and crested wheatgrass in rows for seed production were cultivated. Additional work was also done on the grounds irrigation system. A large sign was erected at the highway, and renovation of the office continued when time permitted. The old army flagpole was painted and a chain threaded for a new flag.

The first tillage operation on the tillage project, which is being conducted in cooperation with the Soil Conservation Service, has been completed. In this project various means of handling crop residue are being studied. Three principles are involved:

1. Leaving all stubble on the surface by using a blade type weeder and a weeder with wide sweeps.
2. Mixing the stubble with the surface soil by using a oneway disk and a moldboardless plow.
3. Turning all stubble under with a moldboard plow.

An equal number of plots are being burned and worked with these same implements to observe the effect where no stubble is returned to the soil. The purpose of this study is to determine the effect of these various practices on crop production, moisture conservation, and wind erosion control.

According to a survey made by E. G. Davis of the Entomological Laboratory, the grasshopper outlook near the station is not very serious. He reports, however, that cutworms are fairly numerous in the native grass as well as in cultivated fields, estimating them at one per square foot. These are practically through the feeding stage at this time.

Maximum temperature, 78°; minimum, 28°; precipitation, 0.10 inch.

MOCCASIN:

Although rain was recorded on four days during the week with a total precipitation of 0.31 inch, much of the available moisture was lost due to high wind velocities during the early part of the week. There was even some soil blowing in various parts of the Basin. Temperatures were variable with minimums below freezing on three consecutive nights. Weeds are a serious factor in many fields, and in some areas seedings of winter wheat appear to be pure stands of fan weed. There appears to be a wide variation in weed growth due to

MOCCASIN,contd.:
tillage.

The fertilizer test with spring wheat, using the lower rates of two commercial fertilizers, was seeded on Monday by Prof. A. H. Post of the Agronomy Department of the Montana State College. The early seedings in the rotations have been completed as well as the bulk and increase fields.

The initial weights were taken of the steers for the brome and native grass summer grazing experiment and the groups placed on their respective pastures on May 7. This is sixteen days later than the two crested wheatgrass groups went on pasture. The gain of better than 1,500 pounds made during these 16 days by the 24 steers on less than 50 acres of crested wheatgrass should emphasize to livestock men the importance of properly utilizing and stocking their crested wheatgrass pastures. Chemical analysis at this and other stations in the Great Plains show that crested wheatgrass has a 20-30 percent protein content during its early spring growth (April and early May in Central Montana). This fact alone should be of value, whether their livestock be cattle, sheep, or horses, in the utilization of this grass which is adapted to the Northern Great Plains and especially to Central Montana.

Maximum temperature, 72°; minimum, 25°; precipitation 0.31 inch.

HUNTLEY:

Weather conditions throughout the week have been favorable for field work, and considerable progress has been made. All corn land was prepared and plots were staked. About 3 acres of alfalfa plots, including variety test and pastures, were plowed up to be fallowed. Loss of stand in these plantings has been heavy the last two years, and the plots were becoming very weedy. Ground was also prepared for late crops such as sorghum, Sudan grass, and beans.

Small grains have made good growth the last few days, and stands appear to be excellent on all plots. Weeds in the winter wheat are generally out-growing the crop, and reports of abandoned acreage continue to be received. Some of the farmers are planning to replace a part of their wheatland with corn, whereas others are reseeding to small grains or cultivating for fallow.

A round of soil samples just completed showed available soil moisture to be about 15 inches deep on land cropped to small grain last year; 20 inches deep on cornland, and 27 inches deep on fallow.

Maximum temperature, 78°; minimum, 33°; precipitation 0.10 inch.

SHERIDAN:

With the exception of the first day of the week, which was the warmest this year to date, temperatures were about average for the season. Wind movement was high on some days, and while one light shower possibly was sufficient to benefit garden crops that had not yet emerged, there was no precipitation of consequence otherwise.

Seeding of grasses for the Soil Conservation Service was completed. Flax was sown and a date of planting corn planted. Cultivation and hoeing of shelterbelts and fruit plantings, and spading downy bromegrass (Bromus tectorum) in the shelterbelts were the principal other occupations of the week.

Many of the spruce in the row immediately east of the old shelterbelt have died. Killing was regardless of spacing, and the cause of the killing has not been determined. Western wheat stem maggots have damaged the stand of wheat in many fields, but no dam-

SHERIDAN, contd.:
age to the wheat on the station has been noted. Western wheatgrass on the station has been badly damaged by that insect, however. Army cutworms are numerous also, and the stand of one field of oats on the station was thinned badly.

Maximum temperature, 79°; minimum, 30°; precipitation, 0.41 inch.

DICKINSON:

A period of low barometric pressure early in the week brought the highest temperature of the year and the strongest winds but little precipitation. Wind velocity at the airport was above 50 miles per hour in gusts on Tuesday and Wednesday. Grains were badly whipped and leaves broken in places, and small areas in the locality were damaged some by soil blowing. A light frost which followed damaged crops very little.

Millet and potatoes were planted on the rotations. Plowing for corn on the rotation plots was completed.

An observation alfalfa nursery of 43 strains and varieties was planted with seed supplied by the Division of Forage Crops and Diseases.

Fifty more fruit trees were received and planted in the orchard. Early flowering varieties of plum are now in full bloom. It appears now that most varieties of fruit escaped the severe early freeze in November with very little or no damage. The orchard and most of the other trees were cultivated during the week.

Mr. F. D. Butcher of the Bozeman laboratory, Bureau of Entomology and Plant Quarantine, in making the early survey of the observation area here, which includes the station land, found very few hopper eggs, and about 50 percent of the eggs had been destroyed by predators.

A group of about 20 range inspectors of the AAA visited the station May 9.

Maximum temperature, 78°; minimum, 28°; precipitation, 0.04 inch.

MANDAN: Arboriculture.

Lining out of conifer seedlings has been in progress all the week. Freezing temperatures during the week injured new growth on one-year ash and hackberry seedlings. No damage was done apparently to seedlings recently emerged, which were in a very tender stage. High winds have dried out the soil surface, and precipitation would be very beneficial for seed and seedlings which have not germinated or emerged.

Horticulture.

It now appears that there will be more winter injury among Prunus species than was earlier apparent. Introduced varieties of plums from Australia and other tender varieties were killed. Sapa, Pottawattamie, Wild Goose, and Oka along with other borderline varieties show severe injury. Many of the sand cherries are severely killed back, which may bear some relation to being weakened by heavy crop bearing last year. Apples, native plums, currants, gooseberries, and native fruits passed through the winter without serious injury. Frosts on the nights of May 7 and 8 caused but slight damage as far as has been observed. New trees were potted for breeding work during the week, and hand crossing has been in progress in the field. The first cultivation of the season is now in progress.

MANDAN, contd.: Agronomy.

Most of the past week was cold and cloudy, with light showers, and high wind on two or three days. Freezing temperatures occurred on two nights. Small grains are making good growth. Slight frost injury to barley occurred. Crested wheatgrass made rapid growth, and fall plantings show excellent stands at present.

Prof. A. D. Smith, of the Utah Agricultural College, Logan, Utah, accompanied by 16 senior students in Range Management, visited the station for two days during the week.

Maximum temperature, 84°; minimum, 28°; precipitation, 0.30 inch.

BELLE FOURCHE:

High winds during the first three days dried the soil rapidly, and the week was generally favorable for the performance of field work. Plant growth was retarded somewhat by cool weather, but all crops made noticeable progress. Spring sown small grains and hay crops have emerged with good stands. Soil samples taken on May 7 indicate that moisture has penetrated to depths of 23 to 27 inches on plowed spring wheat plots, and to an average depth of 32 inches on spring wheat stubble land to be fallowed in 1941. On land summer fallowed in 1940 the moisture has penetrated into the fourth foot, uniting with the reserve unused moisture at that depth.

Dr. A. C. Hildreth, Horticultural Field Station, Cheyenne, Wyo., visited the station late in the week.

Maximum temperature, 73°; minimum, 32°; precipitation, 0.12 inch.

ARCHER:

High winds and cold weather prevailed during May 5, 6, and 7. This caused excessive evaporation and in places the soil baked. The remainder of the week was pleasant.

The weather permitted the seeding of wheat, oats, barley, peas, flax, alfalfa, and grass. On this date the trees are being cultivated and the cleaning of yards is in progress.

The prairies are green and most of the trees are showing a tinge of green. Winter cereals are in excellent condition.

On this date the State moved 10 head of dairy cows and the herd bull from this station to the Afton station.

Maximum temperature, 69°; minimum, 32°; precipitation, 0.27 inch.

NORTH PLATTE:

Three light showers fell during the week, and temperatures of 38° were recorded two nights during the week. Spring grains are making a good growth and rye is beginning to head. The winter wheat is about knee high and has made enough growth to cover up much of the bare areas on the plots. Grass on the pastures has made good growth this spring, and dairy stock have been turned into one pasture to utilize the western wheatgrass.

The corn plots have been prepared for planting. The irrigated hybrid test was planted during the week.

Maximum temperature, 74°; minimum, 38°; precipitation, 0.16 inch.

AKRON:

Showers with generally cool, cloudy weather prevented the drying of the surface soil. Brunker oat stubble duckfoot cultivated since harvest last year was peacock cultivated and damned. Some increase stubble land for fallow across the railroad also was cultivat-

AKRON, contd.:
ed similarly. First date of seeding variety beans was finally accomplished the 6th. Also the second seed treatment experiment for corn. Rotation green manure rye was plowed, and a start made on the fallow plots this week end. The rye stood 20 to 24 inches tall, very thick, and with a stray head in boot. An effort was made to subsurface till the rye on Rotation 31. By piling three men on the back of the machine it was forced to penetrate about 4 inches and under the rye. However, when about half over the plot, the tractor wheels began to slip and the remainder must wait until the surface soil becomes drier. This 7 foot rod under the rye was a dead load for the John Deere Model D tractor in low. It is doubtful if we still have an ideal machine for subsurface tilling. On more open land, this rod penetrating 3 to 4 inches still rifles the surface soil up and over. This is the chief objection to the duckfoot cultivator also.

Cut worms are still present, which now look like the Pale Western. Some rotation plots will be reseeded early next week to prevent fallow condition of the land. Spring grains are not generally more than 2 inches above the surface, whereas winter wheat is almost ready to joint.

Maximum temperature, 78°; minimum, 35°; precipitation, 0.20 inch.

COLBY:

Favorable weather prevailed all week. Sunday was rainy and since then it has been mostly cloudy with only sprinkles of rain occasionally. It has been moderately cool. Field work was in progress at full speed generally the last half of the week.

All crops are making excellent growth. Winter wheat is about 20 inches high on most fields and has a thrifty, dark green color. Most of it is recovering nicely from its lodging condition during the wet weather of last week. It has stooled very heavily, especially where thinned out by the freeze last fall. It has stooled so profusely that there is a tendency to weakness of stem. Where the wheat for some reason is late, it is now from 6 to 12 inches high and looks very promising. Rye is about 2 feet high and almost headed. The spring small grains are about 3 inches high and growing slowly. They seem to have recovered completely from the freezes.

The plowing for the row crops was done Tuesday. The ground was wet, but loose, and turned up comparatively mellow. Preliminary tillage on some of the fallow plots was also done. Row crop ground was clean, except for numerous weeds just starting. Small grain stubble ground was generally green with young thistles, but they had made very little growth. Some of the winter wheat stubble plots were covered with about a 75% stand of volunteer wheat about 14 inches high. These were onewayed to kill the wheat. The ground was still fairly wet, but onewayed like sod.

Soil samples showed moisture down about a foot in the fall plowed wheat plots, 18 inches in corn stubble, 2 feet on cornstalk ground, 32 inches on plot MC winter wheat, which is to be fallow this year; and 40 inches on MC D, where the wheat is now about 20 inches high on fallow.

Maximum temperature, 74°; minimum, 38°; precipitation, 0.13 inch.

HAYS:

Cloudy and generally quiet weather prevailed. The sun peeked through the clouds for brief periods but there was no all clear day.

HAYS, contd.:
There has been no rain of measurable quantity since the 5th. The temperature was favorable for all plant growth.

Except for the stubbled-in and burned-off plots, winter wheat growth is quite uniform at about 24 inches over all the plots and has a dark, rich green color. It is very thick and the foliage is extremely heavy. Although they are now forming, there are no visible signs of heads. It looks as if it will be two weeks before they appear. We are now sure of at least a straw crop, barring hail and other possible accidents. The wheat on stubbled-in and burned-off plots is from 12 to 15 inches and has a poor color. It would, however, look good were it not for the fact that the wheat on all the other plots is so much thicker, taller, and richer in color.

Barley, oats, and spring wheat are much alike at about 8 inches high and very fine looking.

Canada field peas are about 6 inches high and are also promising for a good growth this year.

Soil moisture determinations made during the week on a few plots of wheat show an average moisture content of about 26% in the first foot and about 22% in the second foot. Below the second foot it is about 14% down to and including the 6th foot. A plot of wheat on fallowed land shows about the same moisture content in the first two feet but has about 17% in the third foot, below which the soil is dry.

Barley and oats plots have about 27% in the first foot and 26% in the second foot. Only a small amount of available moisture is present in the third foot, and there is practically no moisture below that depth.

Continuously cropped corn plots are as wet as the barley and oats plots in the first two feet with not less than 20% in any foot to the depth of 6 feet. Calculations have not been made on other corn plots, but they appear to be as wet.

Winter rye was plowed under for green manure May 8. The ground was most too wet for good plowing, but the rye had reached a height of about 36 inches and was heading. The growth was very thick. Of all the plots that are overdue for plowing, the rye plots were the driest. The first foot of soil contained about 24% moisture and the second foot about 20%. Below the second foot the soil was quite dry.

The small grain stubble plots scheduled for spring plowing for row crops are still too wet to plow. On these plots volunteer growth from seed of the previous crop had reached a height from 16 to 24 inches. To prevent further waste of moisture through the volunteer growth, these plots were double disked to destroy the volunteer even though the soil was very wet at the time of disking. The plowing will now be postponed until it is dry enough for good plowing.

Maximum temperature, 76°; minimum, 39°; precipitation, 0.61 inch.

GARDEN CITY:

On May 4, an additional 0.14 inch of rain fell, followed by 0.32 on May 5, making a total for the week of 0.47 inch and a total so far in May of 1.31 inches. Wheat and spring seeded small grains have never looked better in western Kansas. Soil samples were taken on wheat on early fall plowed s eedbed and on fallow plowed May 1, 1940. Moisture penetration was 1.5 to 2 feet, and 3.5 to 4 feet, respectively. Wheat on fallow is approximately 6 to 8 inches taller than continuous wheat. Extensive winterkilling on poorly prepared seedbeds make those plots show rather poorly in contrast to the early seedbed methods.

GARDEN CITY, contd.:

Field work consisted of plowing under the rye for green manure, doing the May 1 tillage operations, and duckfooting where weed growth had started. The basin lister project milo plots were also cultivated to control weeds. The wheat and spring small grain plots were trimmed.

Dr. J. C. Hyde, Tom Weldon, and Robert Sloan, all of Kansas State College, were station callers on Friday, and while here installed a project to study soil moisture movements.

Maximum temperature, 82°; minimum, 48°; precipitation, 0.47 inch.

TUCUMCARI:

After fields dried sufficiently to permit cultivation, excellent progress has been made toward planting preparation the past four days. Spring plowing, followed by harrowing to pack the soil, has been performed, and virtually all other crop land, both plot and increase, was field cultivated. It is hoped another crop of weeds may be killed by a second field cultivation operation in some 10 days, just prior to planting.

Total precipitation since January 1, 8.09 inches, exceeds that of any previous year on record. During the first three days of May 2.28 inches fell, slightly more than normal for the entire month of May.

Ranges are the best in years. Wheat on the plains is rank and vigorous where fall moisture enabled plants to make good fall growth. The row crop acreage will be unusually large this spring in those Plains localities where wheat abandonment is heavy. Farmers have been advised to plant row crops on this land in preference to summer tilling it for wheat seeding the coming fall, in the hopes of reducing future pale western cutworm damage.

Maximum temperature, 88°; minimum, 45°; precipitation, 0.17 inch.

DALHART:

There is now ample moisture in the soil to justify a rather pleasant anticipation of the normal farming operations. Grass is now growing nicely. The trees are just coming into full leaf; it will take another week before all varieties are leafed out. The desert willow which normally is showing leaves on May 10 is now in the leaf bud swelling stage. Grapes are just showing leaves. Russian thistles in the pasture land (eroded grassland) are coming thick. Bare fields are starting to show green. For the first time in many years lilacs and Vanhoutte spirea are a mass of bloom. All fruit trees show a good to thick set of fruit.

Work during the week has been seasonal except for spring plowing which is delayed a week. Normally spring plowing would have started this week; the plans are now to start this operation on Monday. Work during the week included seeding of a grass nursery in the pasture. This included 15 species in quadruplicate. Other work was the cultivation of tree, nursery, and vineyard plantings.

Maximum temperature, 85°; minimum, 45°; precipitation, 0.83 inch.

BIG SPRING:

With the exception of two days when the temperature reached above 90°. the weather was very cool. In fact these temperatures have not allowed the soil to warm up sufficiently for proper seed germination. Cotton planted during the latter part of April geminated fair-

BIG SPRING, contd.:
ly well but made little growth after that. Sudan grass has emerged but made little or no growth.

Winter wheat has made an excellent growth, but it is now badly infested with leaf rust. The plots present a yellow appearance rather than the normal green. How much damage the rust will do is hard to estimate at this time.

Station work has consisted of knifing increase fields, disking plots in the rotation field, planting some cotton, hoeing weeds, and harrowing weeds, and harrowing the cooperative field to prevent soil blowing.

Station visitors during the week included Dr. Schriener of the Division of Soil Fertility and Dr. Clark of the Fertilizer Research Division.

Maximum temperature, 91°; minimum, 51°; precipitation, 0.13 inch.

LAWTON:

Seven rains from May 2 to 11 amounted to 3.45 inches which is more than half of the monthly normal. During the 28-day period, April 14 to May 11, a total of 7.41 inches was recorded. In many parts of the State the precipitation was much heavier, resulting in flood conditions in a few places.

Locally field operations that include planting of sorghums and cotton and the harvest of alfalfa have been very materially delayed. A little field work on the station the latter part of the week made it possible to replant all the rotation plots of feterita, 10 plots of kafir, and three plots of Sumac in field A. All the rotation plots of cotton except two and the cowpeas in this field were planted on the 10th. More than an inch of rain on the 11th again prevents resumption of such work for some time.

Practically all the wheat varieties are headed, and the first heads are showing in the rotation plots. Leaf rust has spread rapidly to the top leaves, and the crop presents a yellowish rusty color. Crown rust has developed quite extensively the past few days in winter oats varieties, and several varieties are lodging badly. All varieties are very rank in growth. The first heads are showing on the early maturing varieties in the spring oats.

Spring-seeded varieties of barley are showing considerable injury from powdery mildew, and they also carry an extreme infestation of chinch bugs. It is not likely that such seedings will produce more than negligible yields.

Weekly temperatures ranged from a minimum of 49 to a maximum of 84°.

WOODWARD:

During the last two weeks, precipitation totaling 2.83 inches was recorded on 13 days. There were no important temperature extremes the mean being 63°, or approximately normal. Wind movement was relatively light.

Wheat continues its extremely luxuriant growth, having very thick stands on most methods of seedbed preparation especially following manures, fertilizers, and fallow. Rye now fully headed has attained a height of about 60 inches on fallow and has exceptional length of straw on other preparations. Considerable lodging possibly will occur in most small grain crops this year. Stands of grass in deferred rotations 41a, b, c, and d, earlier thought damaged by dashing rains, have improved somewhat under the influence of cloudy, damp

WOODWARD,contd.:
weather. Corn has emerged to a uniform stand in all plots. Cotton and peanuts were planted May 6. Other field activities when conditions permitted included cultivation of windbreaks, vineyards, nurseries, and roadways, preparation for sorghum in the cereal project, installation of certain culverts, mowing lawns, cleaning up the campus, and rebuilding the north entrance fence line.

Planting tomatoes in the breeding project and for variety testing was finally completed between showers. Early sown garden vegetables for the most part look promising. Iris on the east contour blocks and over the campus generally are the showiest in recent years. Roses, pinks, honeysuckle, caragana, colutea, and other perennials are beginning to flower. Spiraea and lilacs, especially attractive this season, have now completed their maximum bloom with the exception of a few late varieties.

Seeding grass for increase and in experimental trials was continued in the Forage and SCS projects. Vigorous early growth of certain older material is in evidence, and new plantings generally are emerging satisfactorily. The 50-acre demonstration field planted near Supply in 1940 has one of the best stands imaginable, being an excellent illustration of the possibilities of regrassing abandoned farm land in this region if proper fundamental practices are followed throughout. A 24-acre tract of plowed land at the Range Unit is being resodded with buffalo grass for later pasture experiments. Developmenthent at the Range Unit involving well drilling, fencing and other work is progressing.

Visiting groups recently included Home Demonstration Clubs from nearby counties and also a number of representatives of local garden clubs.

Maximum temperature, 84°; minimum, 50°; precipitation, 2.83 inches. Reservoir stage, 13.7 feet.

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REPORT FOR THE WEEK ENDING MAY 17, 1941.

HAVRE:

The first three days of the week were quite warm, and were followed by a light rain beginning Monday night, after which temperatures have been much cooler. All crops and native ranges were greatly improved because of the moisture received.

Field work in the DLA project consisted of planting flax and corn. Corn varieties and the corn nursery were planted, and corn was planted in the corn and sunflower rotation. Winter rye on fallow is now about 24 inches high and about fully headed.

Portions of Ladak alfalfa in the west field will be clipped on three different dates this year to determine which is the optimum date for clipping dry-land alfalfa for seed production. Five rows in each one-third were fertilized this spring, also to determine its effect on seed production. The first clipping was done this week.

The regular weekly irrigation on the farm alfalfa fields was accomplished. The grounds were also irrigated with the pump irrigation system. The fences at the mountain lease are being repaired at this time.

Mr. J. N. Cummings of the Montana Experiment Station spent several days making fertility tests on the sires to be used this year. The purpose of this study is to determine whether or not the fertility of bulls can be predetermined.

Maximum temperature, 87°; minimum, 41°; precipitation, 0.57 inch.

MOCCASIN:

Showers and cloudy weather throughout the week has retarded the burning on heavy stands of grass. With 0.25 inch of precipitation on four days, field work has not been delayed to any extent.

Field work for the week included the planting of potatoes, plowing and preparing cornland for seeding, and fallowing.

Maximum temperature, 83°; minimum, 37°; precipitation, 0.25 inch.

HUNTLEY:

Relatively high temperatures early in the week caused some wilting in thick stands of weedy winter wheat and rye. This condition was relieved toward the close of the period by cooler weather and light showers. The rapid growth now being made by all crops is fast depleting the limited amount of reserve soil moisture, and unless good rains are received within the next week or so the more advanced grains and grasses are going to suffer from drought.

Spring-sown small grains continue to make a good growth and have as yet shown no wilting. Soil moisture determinations made during the week indicate that most spring grain plots have available moisture to a depth of 15 inches.

Field work performed during the week consisted of plowing miscellaneous fallows; planting corn, Sudan grass, soybeans, and sorgo; placing the hogs on pastures; and making late nursery seedings.

Maximum temperature, 92°; minimum, 36°; precipitation, 0.17 inch.

SHERIDAN:

Unseasonably high temperatures prevailed over the middle of the week, but the last two days were quite moderate. One light shower was sufficient to benefit newly sown grass and flax, but was of little benefit to other crops. All vegetation made a good growth. Some of the flax and grasses sown last week emerged with good stands the last two days.

Corn was planted in the rotations, varieties, and for seed yesterday and today (16-17). Other work consisted mainly in hauling manure from the corral and hoeing weeds in the shelterbelts and fruit plantings. Rotation alleys also were cultivated and the roadways lined.

Maximum temperature, 92°; minimum, 40°; precipitation, 0.39 inch.

DICKINSON:

High temperatures early in the week resulted in rapid advancement of vegetation. Cooler weather with two good showers followed. Small grains now have good stands and excellent appearance. Grasses generally have thicker stands than in any recent year as a result of good rains last fall and during April.

Apple and crabs are in full bloom while most varieties of plum are past this stage. Most varieties have fully as many flowers as a year ago but are in full bloom a few days earlier.

Corn was planted on the rotations on May 12. Showers since have thoroughly soaked the topsoil, so emergence should be uniform and prompt. Corn varieties and increase fields were planted.

Bulbous bluegrass about the station grounds is now fully headed. Stands are thicker and cover fully twice as large an area as in any previous year. This grass has gradually spread in recent years, having become established apparently from a nursery planting made in 1907. It would have provided more forage this spring than in any recent year and has in prospect a good seed yield. It has become established in places among the trees. Most of the seed harvested this year will be scattered in the early fall in the old shelterbelt which is no longer cultivated and which has been invaded by bromegrass, crested wheatgrass, and a variety of weeds. Bulbous bluegrass may have a place for planting among uncultivated trees since it usually matures in late May or early June, then remains dormant and does not use moisture during the late summer and early fall. It has crowded out brome and crested wheatgrass in places on the grounds.

The growth of bulbous bluegrass is too short here usually to make it of much value as a forage grass. It is attractive on the lawn for only a few weeks in the spring, then it dries up and presents a scalded, ragged appearance till late September or October. So it should properly be considered a weed on the lawn. It has been permitted to produce seed in more recent years to determine if it would invade the trees.

Bulbous bluegrass is usually found only in a more mild climate. It is possible a hardy strain has developed here. Its hardiness and ability for quick growth is shown by the fact that in the spring of 1936 it greened up within less than 30 days after surviving a temperature of 47° below zero.

Maximum temperature, 83°; minimum, 35°; precipitation, 0.46 inch; precipitation to date in May 1.43 inches.

MANDAN: Arboriculture

Lining out of conifer seedlings occupied the first half of the week. Hauling brush and other debris accumulated in various plantings has been carried on the latter part of the week. Conifer seed beds have also been planted. These particular trees are all of excellent form and are decidedly American elm type. They are also extremely rapid growers, some of them having reached a height of 14 feet at the third season. Precipitation is badly needed on all seedling growth.

Horticulture

The week has been spent at hand crossing work in the field. Plums, cherries, sandcherries, P. Japonica cherries, pears, and apples were used. The bloom on most varieties was heavy. Rain is needed badly now, and unless it comes soon, good stands of trees planted this spring cannot be expected. Continued dry weather would also cause more dead branches in the older trees.

The first planting of vegetables in the acre garden is up with a good stand. The second planting, which was completed last week, is somewhat retarded due to prolonged dry weather. This is also beginning to tell on the growth of asparagus. Recent cuttings have been low in yield and rather poor quality. Shrubbery groups about the station grounds are at present at their best. Lilacs including Persian, French hybrids, vulgaris, and dilatata are very profuse this year. The last mentioned species, S. dilatata is a very choice ornamental, the florescence being so profuse as to obscure all foliage, and with a delightful perfume all its own. Other shrubs in full bloom include Golden currant, Spirea arguta, native hawthorn, and Hopa crab. Lawns and flower borders are showing need of moisture, and if rain does not come soon, irrigating will be necessary.

Agronomy

The past week was favorable for all field work. A light rain fell during the week. One day was real warm. Crops are now in need of moisture. Grasses are starting to dry up. Crested wheatgrass is starting to dry up in the drilled plantings. The pastures are badly dried up in places. Corn was planted in the rotations on the 16th. The average date is the 18th. Early planted corn is up to a good stand.

Maximum temperature, 86°; minimum, 34°; precipitation, 0.11 inch.

BELLE FOURCHE:

Warm weather prevailed throughout the week. A hail storm occurred the afternoon of May 14, in which hail stones measuring 1 to 1.5 inches in diameter were received, but the storm fortunately was of only a few minutes duration. Damage was confined mostly to alfalfa, sweetclover, trees, and shrubs, and the injury was not extensive. A brief torrential shower followed the hail storm, and a total of 0.44 inch precipitation was recorded, but considerable run-off took place.

All vegetation made a vigorous growth, but lawns and hay crops are beginning to show the need of additional moisture. Alfalfa and sweetclover are much farther advanced than usual, and harvesting of the first cutting of alfalfa hay apparently will be commenced by June 1.

Field work consisted mostly of plowing and preparation of the various corn plots for seeding, and planting corn. Alleyways were cultivated.

Maximum temperature, 90°; minimum, 41°; precipitation, 0.44 inch.

ARCHER:

The weather during the week was, on the whole, clear and warm, the exception being the afternoon of May 15 when a hail storm occurred. The storm was without much wind and the hail stones were soft, therefore, damage was slight.

The small cereal, grass, and alfalfa seedings of the previous week have emerged with good stands. Winter rye is in boot, and winter wheat is jointing. Both of these crops produced thick stands. The grasses have made excellent growth. Most trees and shrubs are in leaf and the late ones are beginning to leaf.

During the week corn was seeded in the rotation plots, and the soil was prepared for the seeding of this crop in the fields.

Maximum temperature, 86°; minimum, 39°; precipitation, 0.69 inch.

NORTH PLATTE:

The first precipitation of any consequence so far this month came in two showers, Thursday morning and evening. The precipitation for May to date totals 0.74 inch. The abundance of moisture in April has stimulated the vegetative growth of the winter wheat, and unless an above normal amount of moisture is received the rest of this month and during June, yields will be low. One agricultural agent in a western Nebraska county where there was a good survival of wheat remarked that it was possible to have a bumper crop or nothing, depending on weather conditions during the next six weeks. Two plots of wheat on Early kalo stubble which have good stands are now showing the effect of a shortage of moisture. The maximum temperature during the week reached 90°, which is quite a contrast to the near freezing temperatures recorded last week.

The corn was planted in the DLA plots on Monday, and nearly all of the corn was planted on the dry land farm during the week. The corn planted last week on land to be irrigated has emerged. The potatoes have emerged and have been harrowed. The three plots grown for green manure were plowed under Wednesday, and four sod plots in the sod rotations have been plowed.

The effect of the sub-zero weather of last November on trees and shrubs is now quite apparent. About three 15-year old Chinese elms have failed to leaf out and there is some injury to other trees of this species, but probably not enough to kill the trees. Many of the shrubs which often kill back during the winter came through last winter with no injury. The minimum temperature of 12° below zero in early November was the lowest recorded during the winter. The fruit trees in the new orchard were nearly all killed, and it has been reported that entire orchards in eastern Nebraska were killed. Several of the dead 2 or 3-year old Chinese elms around the dry-land orchard project were replaced during the week.

Grasshoppers are hatching, and it will be necessary to begin spreading poison bait before long.

Maximum temperature, 90°; minimum, 46°; precipitation, 0.46 inch.

COLBY:

The weather this week has been rather unfavorable for crop growth most of the time. It was the first hot week of the year. The temperature rose to 94° on Tuesday and 97° on Thursday. Then it cooled off considerably, but the wheat which had been making rapid growth under cool moist conditions all season began to wilt and dry seriously during the two hot days. The soil moisture supply in wheat

COLBY, contd.:
fields was rapidly approaching the point of exhaustion. On the station all the continuously cropped plots of wheat, except the corn stalk plots, took on a distinctly brownish cast. The fallow plots wilted but slightly.

Thursday evening a hard rain was accompanied by hail and wind. The rain varied considerably in amount over this county, ranging from a light shower to a heavy downpour. The hail varied greatly, also. In this vicinity there was only a smattering, but over much of the west half of the county much of the wheat was severely damaged, and some fields were completely hailed out. The damage was done not so much by the quantity of hail as by the large size of the hailstones. People out in the storm report some as large as golf balls and a few as large as baseballs. In Colby the precipitation was 0.32 inch, 0.51 inch at the station. Following the storm the weather was chilly but today it is hot again and windy.

The plowing of the bulk of the fallow plots was done Thursday and today. There was an abundance of moisture in practically all the plots, and the ground was unusually loose and turned up much more mellow than ground that is wet usually does. The rye plots were turned under today. On the plowed plots the rye was completely headed and was about 34 inches high. On the milo plot it was almost headed, but was rather uneven, averaging about 30 inches high. The rye plots were almost dry and turned up soddy. Weeds had not used much moisture on any of the plots as they are very small and backward. Volunteer wheat, oats, and barley were rather luxuriant on some of the plots and had used some moisture.

President Farrell of the Kansas State College of Agriculture and Applied Science visited the station Thursday.

Maximum temperature, 97°; minimum, 44°; precipitation, 0.51 inch.

HAYS:

The weather during the week has been part cloudy but more sunny and breezy than any time since in March, and it is the first week without rain. Higher temperatures and more wind than usual caused considerable wilting of the wheat, although the surface soil is still wet. It is believed, however, that a little suffering will be good for the wheat. Too much of the wheat is from 24 to 30 inches high. The foliage is extremely heavy and the advance heads are only beginning to show except for a few fields of Early Blackhull which are well headed and outstandingly goodlooking.

Grass and weeds in the pastures are making a vigorous growth. Buffalo grass is now setting a heavy crop of seed.

A destructive hail storm was reported yesterday in Rooks County, from which point the storm extended northeast. The extent of the damage is not known but a complete loss was reported for a portion of the area covered.

During the week a number of plots of fallow and plots for row crops were plowed and listed. The ground was too wet for best results, but there was fear of more rain and that the ground might get wetter. Two or three good chances for rain have passed over.

A number of soil moisture determinations were made during the week.

Maximum temperature, 97°; minimum, 46°; precipitation, none.

GARDEN CITY:

Weather this week has favored rapid development of crops. Moisture in the amount of 0.54 inch was received Saturday night, May 10, and warm growing weather has prevailed since that time. Weedy plots to be fallowed starting May 1 were worked this week as soon as the soil dried sufficiently to plow. Roadways were worked and alleys cultivated. Methods were also applied to the wheat fallow plots on the Basin Lister Project.

Wheat on fallow is waist high and starting to head. There is sufficient moisture present to make a wheat crop on well prepared fallow seedbeds, but an additional rain will probably be necessary for maximum yields.

The November freeze has killed a high percentage of Chinese elm, an occasional American elm, and some mulberry. Some of these trees leafed out, and the leaves afterwards dried up.

Maximum temperature, 96°; minimum, 47°; precipitation, 0.54 inch.

TUCUMCARI:

Warm weather and lack of rain the past week resulted in rapid drying of surface soil. Considerable row crop planting is now under way in the vicinity. Ranges are excellent, the best in many years.

Station work included pre-planting cultivation, continuation of tree pruning, cultivation and hoeing of tree rows, orchard, and vineyards.

B. F. Barnes of the Dalhart Station and Dr. Whitfield and party of the Amarillo office of S.C.S., were station visitors.

Conchas Lake is reported to be within 4 feet of the top of the dam, and water may readily fill the full capacity of the lake within a few days. Water was turned recently into the canal, as far as completed, a distance of some 20 miles.

All grass seedings made in April have emerged to excellent stands. No other station crops have been planted, for it is hoped to kill another crop of young weeds before planting operations are begun.

Maximum temperature, 93°; minimum, 54°.

DALHART:

Weather has remained favorable for field work. A start was made towards the Spring plowing. The ground is turning over nicely and is just right for plowing both from the standpoint of killing small weeds and from the soil moisture content.

Weeds, while not thick on bare land, are lush and are growing rather rapidly. The trees are just now reaching a fully leafed stage. The later trees and shrubs still have small leaves. This leafing out process is nearly a week later than usual.

Only a few of the grasses which were planted in the pasture are showing stands. Oats, winter wheat, winter rye, and sweetclover plots are already classed as failures. This spring for the first time in several years young sweetclover plants are showing in protected places. For the first time in many years both lilac and spirea gave bounteous blooms. All fruit is showing a good set.

Maximum temperature, 93°; minimum, 40°; precipitation, 0.17 inch.

BIG SPRING:

Favorable weather has prevailed during the past week and the farmers have made the most of it. Warm weather and good soil moisture conditions have caused all farmers to put in full time planting, many

BIG SPRING,contd.:
tractors running night and day. Some cotton is up throughout the county, and much more will emerge within the next few days if present conditions prevail.

Weeds are the big problem on the Station at present; they are growing fast, and it is a little early for the optimum planting time for milo and Sumac. Station work has consisted of staking cooperative field and rotation field. Cotton varieties and cotton spacing and the May 15 variety date of grain and forage sorghums were planted. Other work has consisted of knifing increase Sudan grass and hoeing weeds. Planting of other crops will continue now until everything is in.

Maximum temperature, 94°; minimum, 56°; precipitation, none.

LAWTON:

The past week of clear weather was beneficial to small grains. Field operations were resumed on the 15th, and planting of rotation plots of cotton and cowpeas was completed as well as the planting of miscellaneous projects. Fields that include the chinch bug sorghum project and the cotton variety tests will have to be thoroughly cleaned of weeds before plantings can be made. Planting of both of these projects is already seriously delayed. Cotton planted on the 10th finally emerged to fairly good stands. Replanted kafir and feterita also emerged satisfactorily.

One variety of winter oats, Coker 32-1, is almost ripe. Lodging in the winter oats and barley varieties is very extensive. Although the wheat varieties are very rank in growth, there is comparatively little lodging so far. A maximum infection of leaf rust has developed in the oats and barley as well as in the wheat. Most of the rotation plots of wheat are now pretty well headed.

Heavy damage from army worms is reported in fields that are rank in growth and extensively lodged. A few worms are present on the station, but there is no indication of damage as yet.

Maximum temperature, 86°; minimum, 58°.

WOODWARD:

Following rains very early in the week, skies cleared and temperatures rose to the year's highest marks attended by rather strong drying winds on at least two days. Under these conditions, field work was possible most of the time and by making full use of tractor power and teams a number of delayed activities were fairly well caught up. During the 30 days from April 13 to May 11, precipitation totalling 6.81 inches was reported on 23 days. However, other jobs have been accomplished including considerable fencing at the Range Unit, setting sod, repairing harvest machinery, and making miscellaneous improvements to buildings and grounds.

In the DLA crop rotation and tillage method project, spring plowing for sorghum was completed. Corn plats have been thinned to proper stand and cultivated. Good emergence of cotton from plantings made May 6 were in evidence May 16, and peanuts planted the same time are also emerging. Soil moisture samples indicate the sixth foot is as wet as the first on cultivated land. Wheat plots with excessive tillering and length of straw are rapidly depleting moisture in the upper levels. Excellent growth of Austrian peas was plowed under for green manure. Wheat plots with the exception of late dates of planting have now headed quite uniformly.

WOODWARD, contd.:

The vegetable garden has done well thus far, first radishes and lettuce are being harvested, and satisfactory stands of other material obtained. Tomatoes set out early in early April did not freeze this year and are already flowering and setting fruit. A few persimmon grafts were made at the station and on a nearby farmer cooperative project. Orchards and sycamores have been sprayed because of insect pests. One buffalo grass lawn area including several vegetative types is being spot-sodded under rather favorable conditions. The extraordinary flower show continues with iris, tiger lillies, pinks, oriental poppies, roses, and other species blooming profusely.

Technicians of the Soil Conservation Service have been engaged studying ways and means of improving erosion control on the station in general. Detailed soil survey maps will also soon be available. Lines for "channel" terraces were run on the west slope of the SCS increase grass seed field north of the road to the reservoir and a sample terrace has been constructed. These participating included representatives of the Regional Office, Area Office, and CCC Camp engineers. A conservation plan will eventually be drawn up keeping in mind problems incident to the proper conduct of agricultural research and in conformity with the use now being made of the land.

Work at the Range Unit with reference to revegetation chiefly involved continuation of resodding a 24-acre pasture tract to a pure stand of buffalo grass. Sage brush mowing experiments have been transferred to the Range Unit and a more elaborate set of trials outlined. Representatives of the Forage Crops division recently put on a mowing demonstration for a convention of the Panhandle Feeders Association of Texas held at Canadian.

Visitors other than those heretofore mentioned included a delegation of HDA Women's Clubs from Harper County; H. A. Gunning, Nursery Division; H. E. Towner, Agronomy Division, Soil Conservation Service, Washington, and party.

Maximum temperature, 96°; minimum, 52°; precipitation, 1.32 inches.
Reservoir, 15.2 feet.

AKRON:

First nearly true summer weather hit this region the past week, and spring grains started a growth race. They quite well cover the ground by this week-end. Winter wheat has made a tremenduous vegetative growth thus far and is in precarious condition unless cool, rainy weather continues to prevail.

Cutworm damage was finally safely estimated and several oat, barley, and spring wheat plots were wholly or partially reseeded. There seems to not be much question but that Pale Western finally made its appearance to mop-up these plots, where before there appeared to be only surface pasturing.

Second date seeding of variety beans was made on the 15th. Soy beans planted May 6 are emerging. It is rare that the soybeans emerges ahead of the Pinto bean. Rotation corn and sorghum plots were rod weeded to eliminate emerging weeds. The plowing of the fallow plots was completed and the sub-surface tilled rye plot was finished. Rotation and Cereal roads were trimmed and worked. Most of the open land outside the rotation project was worked. Burning of accumulated dead thistles was about completed.

D. W. Robertson called early in the week.

Maximum temperature, 90°; minimum, 42°; precipitation, 0.11 inch.

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WEEKLY STATION REPORTS

OF THE DIVISION OF

DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

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MAR 1941

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REPORT FOR THE WEEK ENDING MAY 24, 1941.

HAVRE:

The first and the last days of the week had maximum temperatures of 82° and 87°, respectively, whereas the other five days had an average maximum of 66.4°. The average minimum was 41°. Rainfall amounting to 0.14 inch was received Saturday night and early Sunday morning.

Experimental field work consisted chiefly of summer fallowing, most plots being quite dry and plowing difficult. All roadways were marked and cut off. Crested wheatgrass is showing signs of drought, as are native ranges. No insect damage has been observed.

The fallowed strips were cultivated in the contour field, as well as one fallowed strip in the west field. Alleys in the Soil Conservation field were cultivated. The grounds were cultivated, and hoeing is now in progress where horses or tractors cannot be used. Work was begun on the development of a spring on the newly leased land. The dairy barn and cattle feeding shed have been painted, and trimmings are being painted on the other brick buildings.

Preparations are being made for the Livestock Field Day on May 28. According to preliminary reports, a good turn-out is expected.

Maximum temperature, 87°; minimum, 35°; precipitation, 0.14 inch.

MOCCASIN:

Weather conditions throughout the week were favorable for field work, and considerable rogress was made. All corn plots were worked and seeded. Other work consisted of trimming rotation plots, hoeing weeds in trees, and finishing fallow work.

Winter wheat and grasses continues to be in great need of moisture.

Maximum temperature, 83°; minimum, 29°; precipitation, 0.08 inch.

HUNTLEY:

Temperatures throughout the week were favorable for the development of small grains. Spring grains and weed-free plots of winter wheat have grown rapidly. Weedy stands of winter wheat have shown some wilting on the warmest days, but the condition was not so severe as it was a week ago. A light shower received early in the period may have been more help than was anticipated at the time. Corn is coming up nicely on fall-plowed plots, and a scattered stand is appearing on spring-plowed land. Winter rye is beginning to head; that in the pasture experiment was mowed to retard maturity and promote a growth of more palatable forage.

Field work has consisted of planting late plots of sorgo, Sudan grass, soybeans, and hybrid corn; cultivating alleys and fence lines; and trimming plots. Miscellaneous plots of cloddy fallow were leveled and rolled.

Maximum temperature, 81°; minimum, 35°; precipitation, 0.18 inch.

SHERIDAN:

Another week has passed with no rain of any consequence, and with two fairly hot days, although temperatures on the whole were about average for the season. This makes the 6th week since any precipitation in an amount sufficient to benefit growing crops has been received. So far, since the first of April, the season has been very similar to last year, when there was no precipitation of any consequence, except on a small part of the station, throughout the season after the heavy rains of April. Some heavier rains have been received both at Sheridan and up the valley east of here, than have fallen here in the last month. However, crops generally that have made considerable growth are in much better condition than at the same time last year, and late sown crops such as flax and corn are either up to a much better stand or are germinating much more evenly than last year.

The remainder of the corn was listed in. Vine crops were planted in the garden. Dead spruce were pulled from the row east of the 1917 shelterbelt plantings. A part of the vacant spaces left were filled in, with wider spacing, with stock moved from the 1927 planting of spruce, where it was intended to thin. The poorest of the stock in the latter planting, where it was to be thinned, was pulled.

Maximum temperature, 87°; minimum, 30°; precipitation, 0.20 inch.

DICKINSON:

High temperature the first of the week was followed by light rain and cooler weather with frost on the night of May 22. This did no damage to field crops in the locality, but froze some tender plants in early gardens in low places. Leaves of hackberry trees in several situations on the Station were frozen. In plantings made in 1938 leaves of American elm and green ash were uninjured, while hackberry planted in between them had the leaves blackened up about 5 feet. Hackberry leafed out a little later than the other species, but the leaves obviously are more tender at this stage. Apparently the heavy set of plums, apples, and crabs was affected very little.

The surface soil dried rapidly on several days by winds. Crested wheatgrass in solid plantings has curled badly in places during the day. Grains have stooled well and look good, but Russian thistle is coming quickly in some fields.

Rotation plots were trimmed. Potato varieties were planted. Millet, sorgo, and Sudan grass were seeded in the forage trials. Increase corn blocks were planted, and some of the fallow patches were plowed.

Maximum temperature, 84°; minimum, 30°; precipitation, 0.20 inch.

MANDAN: Arboriculture

Hoeing and cultivation were in progress the first part of the week. American and Chinese elm seed were collected the latter part of the week. The constant high winds and lack of rainfall is resulting in losses of seedlings and trees planted this spring. All seedling growth has been stagnant for the past 10 days, and conifer transplants now give the appearance of becoming a total loss.

Horticulture

Continued dry weather and high winds have been hard on horticultural plants. In general, fruits have set a good crop, but rain is needed. Spring drought injury is becoming more apparent. Orchards and nurseries were cultivated during the week. Budded

MANDAN, contd.:
material was suckered, and the shoots were tied to stakes. Seedlings resulting from breeding work were transplanted from seedflats to nursery. Potatoes were planted on May 22 and 23. The usual variety tests and spacing experiments are being continued.

With the continued dry and windy weather there is little progress in growth of vegetables so far planted. Setting out of large plots of tomatoes will have to be deferred until rain comes. Lawns and perennial flower beds are showing need of water, and irrigation of the grounds is scheduled to start next week. Shrubbery groups are still holding their own, and since they came through the winter with little or no winter injury, the display of bloom is very satisfactory. At the present Spirea Van Houttei, Syringa Rothomangensis, and Crataegus pinnatifida are at their best and producing a great show. Hoeing and spading of shrubbery and tree groups was in progress during the week.

Agronomy

The past week continued dry, with high wind, and high temperature on one or two days. A light frost occurred the night of the 22nd. There was little damage to field crops. Some weeds looked as if they were killed. All corn planting was completed during the week. Crested wheatgrass has dried up badly in drilled plantings. Small grain is starting to suffer for moisture.

Maximum temperature, 98°; minimum, 33°; precipitation, 0.06 inch.

Cooperative Grazing Experiment

Difficulty was experienced in obtaining steers for the experiment, and they did not arrive at the pasture until this week. The cultivated pastures are practically all dried up and the early growth is lost to the cattle. Native grass is starting to dry up, and the prairie will soon be brown unless a good rain comes.

BELLE FOURCHE:

A strong, warm wind on May 18 caused excessive evaporation and injured hay crops. Temporary relief was afforded by a slow, steady rain of 0.43 inch precipitation during the night and following morning. Cool to moderate temperatures prevailed thereafter until the last day of the week. A strong wind on May 23 dried the soil rapidly, and grass, alfalfa, and sweetclover commenced burning or were suffering seriously from lack of moisture with the resumption of warm weather over the week-end.

Small grains made outstanding growth, but they have tillered so extensively that unusually liberal rains will be required for the grain to mature normally. Winter wheat stands have improved very materially, and the crop will apparently outgrow the weeds. There is a wide range in the stage of growth on most of the winter wheat plots, giving them an uneven, ragged appearance.

Field work consisted chiefly of trimming plots and cultivating roads.

Maximum temperature, 89°; minimum, 36°; precipitation, 0.45 inch.

ARCHER:

The weather during the week ending May 23 was cold, dry, cloudy, and rather windy. These conditions retarded plant growth. Soil moisture, while sufficient for the present, is such that under the heavy growth of winter cereals a copious rain would greatly increase the rapidity of growth.

ARCHER, contd.:

During the week soil moisture samples were taken. The seeding of corn in the fields will be practically completed today. Station lambs are making unusual growth.

Maximum temperature, 78°; minimum, 32°; precipitation, Trace.

NORTH PLATTE:

The weather during the week was cool, and one rain of 0.43 inch was received Monday night. The precipitation to date for May is 1.07 inches, and the normal for the month is 2.99. The wheat on sorghum land and the stubbled-in plot is beginning to fire. Cutworms have been very numerous this spring, and considerable damage has been done to the corn. Some replanting in the corn plots was done because of cutworm and gopher damage. Young grasshoppers are very numerous and poisoning will begin next week.

The spring small grains are looking good, and the early varieties of barley will be headed in a few days. A trace of leaf rust can be found on the wheat. In the eastern section of the State in some wheat fields, leaf rust pustules nearly cover the entire surface of the leaves.

The cutting of the first crop of alfalfa was started. Blooming has not started, but the plants have made a rank growth and considerable lodging has occurred.

Maximum temperature, 91°; minimum, 41°; precipitation, 0.43 inch.

AKRON:

Hard winds caused soil blowing of susceptible spots in the locality on Sunday and to a less extent on Monday. On the whole, the week was favorable for outside field work and good progress was made. The hybrid corn variety land, worked earlier to eliminate weeds was listed out Monday. Dr. Warren Leonard came down from the College Wednesday and supervised the planting of this experiment. Rotation corn and forage sorghum plots were planted Friday and Saturday. This corn all went in under favorable conditions for prompt emergence. Other work was the burning of accumulated dead thistles, and their removal from the cereal small grain plots. Left in the plots, these weeds render binder harvest very difficult.

The date-of-seeding of bean varieties on proso stubble land not worked until this spring is meeting with cutworm damage. These appear to be the pale western type. Poison bran was scattered, but with little visible success thus far. These worms appear to do but little above ground feeding, but have been found eating the ungerminated beans. Near cut-off plants, it is possible to find from two to three worms from tiny size to a quarter of an inch in length. If widely disseminated these worms may yet be present to prey on the emerging corn. Spring grains on plots that were reseeded because of cutworm damage have emerged. These spring grains made good progress during the week.

Fall-planted grains are beginning to burn on continuous cropping preparations. Much complaint from burning winter wheat is heard throughout the section. Some damaged winter rye plants on fallow were pulled, and the root system was found to be very shallow and meager. Fall-planted grains are in very poor condition to withstand the hot, dry weather experienced the past ten days. None of this wheat is as yet headed, and it could make a good come-back with cool, damp weather.

AKRON, contd.:

Sod grasses are foul with annuals such as Festuca octoflora, wild brome, and wild barley.

D.E.Stephens visited the station Monday.

Maximum temperature, 91°; minimum, 40°; precipitation, 0.17 inch.

COLBY:

This was a favorable week for crop growth. Most of the time it has been cool and cloudy. Rain on three days all came in intermittent, easy showers and soaked into the ground without much run-off. The rains were very timely, as the wheat had used up most of the moisture which fell last week.

The wheat that had dried badly before the rain of last week is making a remarkable recovery, but apparently it will not have so many heads as the wheat that has not suffered for moisture. Fields planted to Blackhull, Tenmarq, and other early varieties are partially headed. The straw is generally about 30 inches high on the better fields, and the heads are long. Barley is starting to make rapid growth, also. It is now about 8 inches high on most fields.

At the station the summer-fallow plots of winter wheat are growing nicely, and the continuously cropped plots are looking much better than a week ago. The spring small grain plots are beginning to make rapid growth.

The preliminary tillage on the corn and sorghum plots was done between showers this week. They were not very weedy, except where volunteer wheat was fairly thick. Thistles were thick in places but had made almost no growth all spring.

Maximum temperature, 90°; minimum, 47°; precipitation, 0.94 inch.

HAYS:

Small but measurable quantities of precipitation were recorded on four days.

The winter wheat on the project averages about 30 to 36 inches high and is about 60 percent headed, but much of the foliage extends above the heads so that from the roadside many of the heads are not visible. The foliage has been extremely heavy all spring. As a result, heavy demands have been made upon the soil for moisture, and previous to the damp weather of this week the wheat was beginning to show signs of a lack of easily available moisture.

The wheat looks much the same on all the plots except for a slightly thinner growth and lighter color on the late-tilled plots and a much thinner and shorter growth as well as lighter color on the stubbled-in plots and plots drilled after the stubble had been burned. The wheat on these apparently poorer plots, however, is more advanced in stage of development than it is on the plots that were early tilled or fallowed.

Oats and barley are about 15 to 18 inches high and are heading. These crops look very promising.

Spring wheat is slightly higher than the oats and barley and is also heading.

Leaf rust is now developing quite rapidly, and there is a considerable amount of it.

Alfalfa, seeded about ten days ago, is now up to a fair stand. Buffalo grass, seeded at the same time, is just beginning to emerge.

Maximum temperature, 88°; minimum, 52°; precipitation, 0.77 inch.

GARDEN CITY:

Precipitation on five days during the week totaled 1.21 inches. This brought the total thus far this month up to 3.01 inches. Temperatures were quite cool during the week.

The wheat on some of the plots was showing signs of moisture deficiency before the rains came, but it revived. Leaf rust is showing on the wheat and may become serious if the damp conditions continue. The wheat is heading on most of the plots, however, that drilled on sorghum and cowpeas stubble is late and very little has headed.

Soil moisture samples were taken on the M.C. wheat plots.

L. L. Compton, Extension Agronomist, Kansas State College, was a station visitor.

Maximum temperature, 88°; minimum, 50°; precipitation, 1.21 inches.

TUCUMCARI:

May precipitation to date totaling 6.59 inches is the fourth highest of any month on record and more than was received in the entire year 1934. Precipitation occurred on the past seven days, totaling 4.10 inches. The precipitation to date, 12.40 inches, is the second highest on record for the period.

Areas in nearly all directions have had serious losses from floods; damage including lost homes, destruction of crops, and washouts on highways, highway bridges, and railroad bridges. There has been no loss locally other than washing of fields and loss of newly planted row crops.

Field work has been impossible the past week, and the station force has pruned dead wood from trees, excavated for and placed gasoline storage tank and pulled weeds from fence lines.

Fields washed very little considering the heavy precipitation, but it appears likely no work can be performed for some ten days. No planting had been done, fortunately, When fields dry sufficiently for working they will be given a final pre-planting cultivation, with planting following as soon as possible.

Conchas Lake is full, with water first going over the spillway today. Some 15 miles of the canal have been filled and tested, but many miles of main canal, as well as all laterals, have not been constructed. Completion of the irrigation project could be obtained in some two years, but with reduced appropriations probable, it may require six to eight years. On July 1 fishing will be permitted in Conchas Lake, some 25 miles in length, with maximum depth at the dam 151 feet.

Station visitors included B. F. Barnes, Dalhart, and J. E. Smith, Woodward.

Maximum temperature, 85°; minimum, 47°.

DALHART:

The wet season continues. Except for a short time on Monday it was again too wet for field work. Fortunately the cool, damp weather is not conducive to rapid weed growth, or the lack of work on the station fields would present a serious problem. There now remains about a week of seedbed preparation, and it now appears that it will be the middle of the next week before this job can be continued. An appreciable amount of rain has fallen on each of the last five days. There has been some run-off but a large percentage has been absorbed by an already wet soil.

DALHART, contd.:

Packeting of seed for sorghum planting has occupied much of the time during the current rainy spell. Some time was also spent on opening long unused water drainage channels.

Rainfall during the week totaled 3.54 inches. This makes the rainfall for the current month total 7.72 inches, which is the heaviest May rainfall ever received here. The yearly total is now 13.22 inches, which is also the heaviest rainfall to this date so far received. Incidentally the 1941 rainfall is now appreciably greater than the total rainfall for the preceding year, 1940.

Maximum temperature, 84°; minimum, 46°; precipitation, 3.54 inches.

BIG SPRING:

Two rains during the week totaling 1.56 inches have been received. These rains together with continuous, cool, cloudy weather prevented the soil from drying out sufficiently to permit planting to any extent. Cowpea, soybean and peanut varieties were planted in some of the sandier soils. Some increase hegari and milo were also planted, but probably will have to be replanted as a dashing rain was received the day after planting. An attempt was made to plant in the rotation field, but the soil was too wet.

Cotton varieties and the May 15 date of sorghums are emerging to good stands. The cattle feeding experiments were closed out this week and the experimental cattle shipped to Forth Worth for slaughter, where slaughter data will be obtained.

Mr. Mejia of the State of Columbia, South America, was a Station visitor during the week, studying cropping methods.

Maximum temperature, 86°; minimum, 60°; precipitation, 1.56 inches.

WOODWARD:

Unsettled weather attended by frequent rains prevailed during the entire week, precipitation on two days being excessive. The station reservoir filled to capacity on the 23rd for the first time since the completion of the dam late in 1938, and a heavy flow passed over the spillway for nearly six hours. The structure as a whole appeared to withstand the stress of moderate flood conditions satisfactorily.

Owing to wet soil very little field work was possible, except for miscellaneous cultivating and hoeing between showers. Wheat and other small grains continued to make good progress, however, leaf rust has been developing and may possibly become a factor in reducing yields. Stem rust has not been noted thus far. Construction of terraces on the SCS grass seed increase field was also halted by soft ground. Some additional sodding was possible at the Range Unit on the 19th. The general condition of spring seedings of grass and transplants of selections in the breeding project is quite good. Under the influence of continuous rains and equable temperatures, most native grass species as well as others have made excellent growth up to the present time.

Work accomplished on the campus included setting out buffalo grass experimental lawns, using a specially built-4-inch hand transplanting cylinder which appears to be an improvement over the spade cutting and hole digging process formerly employed for limited areas. Seeds of various tree and shrub species were planted in seed bed areas. Greenwood cuttings of a number of shrubs treated with hormodin to stimulate rooting were set out in the greenhouse during rainy weather. Winter injury to adapted trees from the last fall freeze

WOODWARD,contd.:
does not seem to be as serious locally as earlier anticipated. However, a few Chinese elm suffered and tipping back occurred in some types of Ulmus parvifolia. On the other hand, several introduced southern species which usually top freeze during the winter suffered more or less killing this year. Injury to a number of fruits has also been pronounced in certain cases. Spirea and grapes received their first application of iron sulphate in the chlorosis control test block. Roses and daylillies now have very attractive bloom.

About 75 HDA Club women and their families from Alfalfa County, Okla., visited the station on the 20th. Owing to heavy showers field trips were canceled, but colored projection slides proved a very successful substitute in bringing recent actualities from the field to the attention of the group.

Maximum temperature, 87°; minimum, 52°; precipitation, 4.52 inches. Reservoir full, 19.4 feet; high water mark during flood 23.3 feet.

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ero 46148
MAY 31 1941

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REPORT FOR THE WEEK ENDING MAY 31, 1941.

HAVRE:

The weather was favorable this week for crops. The moisture received was needed and helped revive grass and cereals that were beginning to suffer from drought. More moisture is needed to mature the heavy growth of cereals. Web worms are stripping the boxelder trees and currant bushes around the station.

The emergence soil moisture sampling was taken in the D.L.A. corn rotations, fallowing was finished in the B field, and alleys were cultivated. Rogueing was begun in the registered seed plots. A date of clipping dry land alfalfa in a seed field was also done.

Calves were branded, castrated, and vaccinated against blackleg. The cattle were moved into the newly leased 400 acre tract.

Activities were centered around the livestock field day which was held May 28, and which brought an attendance of about 500. The program started at 10:30 in the morning with a trip around the grass plots and regrassing demonstrations. Mr. H. J. Hargrave, Superintendent of the Manyberries Station, Canada, gave a talk on limited versus rotational grazing. The Havre Chamber of Commerce served a free lunch at noon at the barracks building. After lunch R. R. Woodward led the discussion on a ten-year summary on large-type versus small-type Herefords, and F. S. Willson on the ten-year summary on limited versus full feeding of calves, yearlings, and two-year-old heifers. J. N. Cummings of the Bozeman Experiment Station spoke on the record of performance work now in progress at the station. Paul Orcutt, Extension Livestock Specialist, gave a resume on the practical points which he considered important. Director Clyde McKee made a few remarks to the group. Then the crowd was taken to the barn lots, where the animals were segregated into the various classifications. The five herd bulls being tested this year were on display, and the yearling and two-year-olds were lotted into sire groups. The power buck rake was demonstrated, as well as the grounds irrigation pumping system.

Maximum temperature, 91°; minimum, 41°; precipitation, 0.41 inch.

MOCCASIN:

Light rains on four days throughout the week, with cloudy weather, have helped to maintain good growing conditions on spring seeded crops.

Winter wheat and grasses have suffered from the drought so that more moisture will be needed to restore growth again.

Precipitation to date, shows a little over 2 inches below the 32-year average for the first five months of the year.

Work during the week included trimming plots and nursery on the Cereal Project, trimming rotation plots, harrowing corn, and hauling gravel.

Maximum temperature, 84°; minimum, 36°; precipitation, 0.87 inch.

HUNTLEY:

A shower amounting to 0.39 inch early in the week followed by two days of damp, cloudy weather, brought temporary relief from crop deterioration as a result of drought. At the close of the week such crops as winter rye, weedy wheat, and crested wheatgrass looked no worse than they did at the beginning of the period. Winter rye is now fully headed on rather short straw, and such winter wheat as is not smothered by weeds is in the boot. Spring grains continue to make a thrifty growth. Corn, soybeans, sorgo, and Sudan grass are now up on all plots with excellent stands.

Field work has been devoted to weed control operations, such as the cultivation of row alfalfa, alleys, and roads. This work was held up to some extent by wet soil following the rain.

Maximum temperature, 92°; minimum, 40°; precipitation, 0.47 inch. Precipitation for May 1.12 inches; Average 1.98 inches.

SHERIDAN:

Fairly cool, about the average for the season, and partly cloudy weather prevailed over the most of the week. Two light showers falling within a 24-hour period were of benefit to all spring sown crops and may have benefited fall sown crops and grass temporarily. The most of the level planted corn emerged during the week. Growth of all crops, excepting some on light, sandy soil, continues good.

Winter rye was plowed under for green manure, Sudan grass was sown in bulk fields for hay and pasture, garden plants were received from Cheyenne and planted, and deadwood was trimmed from the shelterbelts.

Maximum temperature, 87°; minimum, 41°; precipitation, 0.59 inch.

DICKINSON:

Unseasonably hot weather on Sunday was followed by showers on 6 days with excessively heavy rainfall on the 29th. This came in intermittent torrential showers through most of the day and amounted to 2.67 inches, of which 1.36 inches fell in a period of an hour about noon. Showers again last night amounted to 0.39 inch, or 3.08 inches in the two days.

This brings the total for May up to 5.34 inches, the most for the month since 1927 and the third heaviest amount recorded in the month in 50 years.

Some damage resulted, by washing, flooding, and covering up garden, corn, and forage crops which were still small. An excellent stand alfalfa in the nursery and plots was so small that much of it was covered and some washed out.

The rain was of great benefit to grains and to pasture and grasslands. Grains present an excellent appearance, although some fields are quite weedy. With the water in the soil, the present outlook is for a better yield than in 1940, but probably not as good as the excellent crop in 1939.

Fallow and rye green-manure plots on the rotations were plowed. Cultivation and hoeing of row crops is in progress. All row crops will need immediate cultivation, as soon as dry enough, to prevent crusting of the soil.

Maximum temperature, 90°; minimum 45°; precipitation for the week 3.65 inches; precipitation in May 5.34 inches; normal for the month 2.24 inches. Precipitation to date in 1941, 8.24 inches; normal 5.13 inches.

MANDAN: Arboriculture

Soil moisture sampling to a depth of 10 feet has been done in the new series of spacing blocks. Some hoeing has been done but the soil has been too wet for effective killing of weeds. Precipitation during the week has been very beneficial for small plants. Weeds are now making a rank growth - most fields having become green the past few days.

Horticulture

Rain during the past week was very beneficial to horticultural plantings. There has been a good set of fruit, so at the moment crop prospects are favorable. The first spraying of the season was started, but discontinued because of the rain. Permanent labels are being made for trees shipped to horticultural cooperators this spring.

Tomato, eggplant, pepper, and late planted cabbage and cauliflower plants were set out in the Acre garden Tuesday. All semi-formal bedding on the grounds including cannas and geraniums was completed Saturday. Irrigating of lawns and shrubbery has been carried on all week. The soil now is in excellent condition in the various field plots of vegetables, and fair success with this class of horticulture is looked for this season.

Agronomy

Cloudy, cool, and rainy during the past week, except on the 25th when the temperature reached 95° with a high wind.

Not much field work was possible during the week because of wet soil. The rains were not heavy but all soaked into the soil. Rain was recorded on 5 days of the week, ranging in amount from 0.13 on the 30th to 0.72 on the 28th. The total rainfall for the month was 1.95 inches with 1.44 inches falling during the last week. The total for the year to date is 5.05 which is the 25-year average. The 25-year average for May is 2.20 inches.

Crops have improved with the rains, and prospects are now better than a week ago. Crested wheatgrass has improved, but drilled plantings are heading short. Corn is up to a good stand.

Maximum temperature, 95°; minimum, 44°; precipitation, 1.44 inches.

Cooperative Grazing Experiment

The steers were divided and started on the various pastures during the week. The steers started on the regular pastures averaged 548 pounds per head.

The best grazing period for crested wheatgrass had passed, but it was not possible to get the cattle in time to start them on pasture sooner. The crested wheatgrass and other cultivated grasses were badly dried up. They have improved with the rains, but likely will not improve to the extent they might have, if they had been grazed down earlier.

The native pastures were in excellent condition for grazing. Blue grama is now furnishing feed. Western wheatgrass was retarded to some extent by the drought.

BELLE FOURCHE:

Moderate temperatures prevailed most of the week, but a strong, warm wind on May 25 was injurious to advanced crops. A substantial shower of 0.57 inch, however, was received the night of May 31.

With the possible exception of the rain on May 31, none of the 2.04 inches precipitation recorded in May occurred in amounts sufficient to be of more than momentary benefit to vegetation. Hay crops and winter grains rapidly utilized the available moisture in the

BELLE FOURCHE,contd.:
soil; and crested wheatgrass, bromegrass, alfalfa, and winter rye commenced burning during the week. Crested wheatgrass and winter rye were attempting to head, and the recent rains will permit them to complete heading. The showers on May 31 and June 1 replenished the soil moisture utilized by vigorous growing spring grains, and should enable all spring crops to continue an uninterrupted growth for at least another 10 days.

Field work consisted of plowing fallow, turning under winter rye and sweetclover for green manure, and duckfooting roads.

Maximum temperature, 85°; minimum, 45°; precipitation, 0.87 inch.

ARCHER:

The weather during the week ending May 31 was considerably warmer than during the previous week. Local showers were common. A shower of considerable intensity occurred May 25, the precipitation of which amounted to 0.50 inch. The total precipitation during May is 1.78 inches.

If the present growth of winter wheat is to be brought to maturity, abundant rain will be necessary. Spring grains are making a good start, and corn in the rotation plots has emerged.

The listing of corn in the dairy field has been completed, potatoes have been planted, and fallow tillage in the rotation plots is nearing completion.

Maximum temperature, 74°; minimum, 40°; precipitation, 0.66 inch.

NORTH PLATTE:

Rain was recorded on four days during the week, making the total for the month 2.28 inches, or 0.71 inch below normal. The precipitation for the first five months of the year is 0.88 inch above normal. Temperatures during the week in general were cool.

All the corn plots have been gone over to check stands and replant in spaces where there has been gopher or cutworm damage. The damage to a few plots has been as much as 50 percent. Cutworms are doing considerable damage in this section of the State and corn planting has been delayed. Poisoned bait was spread for hoppers on Tuesday.

The winter wheat is heading, and in this part of the State where stands were reduced by winterkilling the wheat has thickened by stooling and is looking good. Leaf rust is prevalent in most fields. The early varieties of barley and oats have headed.

H.A.Gunning, A.E.McClymonds, W.W.Austin, A.D.Stoesz, H.Tower, and W.U.Kell of the Soil Conservation Service visited the station Tuesday and inspected the grass and rotation work.

Maximum temperature, 88°; minimum, 49°; precipitation, 1.11 inches.

AKRON:

Cooler this week, but no rain of consequence reported anywhere over the immediate region. Winds have not been high, but the thrashing the succulent leaves of the winter wheat received the week before contributed materially to the continued browning of those fields. This browning of the winter wheat was rather to be expected, unless perchance the season would have supported a 60 bushel per acre crop. Not having headed, winter wheat could yet make a good comeback, though it naturally has been injured. Spring grains are not weedy, have not burned, and Club Mariout barley has the head in boot.

AKRON, contd.:
Rainfall soon would be very timely for these, and as has been stated, could cause good heading among the winter varieties.

Corn and forage sorghums, planted last week end, are emerging. Cutworms are still present, but the May 15 seeding of beans is emerging and growing in spite of them, so it is not expected they will prove a factor in corn and sorghum stands.

May bids fair to pass with 1.72 inches of precipitation, 1.15 inches of which fell the first day. This has thus been an usual May drought.

Cutworm moths fairly deluged the station buildings this week end.

D.W.Robertson, T.G.Stewart, and Rodnay Tucker came down early in the week and arranged for an Extension Service Field Day at Akron on June 26.

Maximum temperature, 85°; minimum, 46°; precipitation, trace.

COLBY:

It did not rain on Decoration Day this year, but did rain on three other days this week. All crops are well supplied with moisture for present needs and are very promising. The wheat on the DLA projedt is practically headed on nearly all the plots. The spring small grains are beginning to head. They are not over a foot high but seem to be growing nicely.

Winter wheat and the spring small grains are very promising generally over this section of Kansas. Even the wheat which burned rather badly two weeks ago is now heading and looks very promising. The hailed wheat has greened up considerably, also. Pastures are a luxuriant green. Weeds, particularly beggar lice and little grasses, especially buffalo grass are making a heavy growth and are spreading considerably. Western wheatgrass is much in evidence again.

The freeze last November killed some of the trees, nearly all the Montmorency cherries, and some Chinese elms. Occasionally one sees a tree of other species dead or seriously injured.

On the project this year we have an unexpected and untiring friend in the cutworm. The winter wheat and other small grain plots were fairly covered with thistles last fall. This spring the wind scattered the seed all over after the spring small grains were seeded. Thistles came up thick everywhere. They were set back by the late freezes, so that they never made much growth until the last few weeks. About the time they started to grow good the cutworms began working on them, and now there is scarcely a thistle on any of the plots. The fallow plots to be plowed in June were covered with thistles when the May 15 plowing was done but are now bare, except for some stolls of volunteer wheat. The winter wheat plots, even those with very thin stands, have been cleared of weeds. On only a few of the spring small grain plots are there any thistles left. Where there are any thistles, the cutworms are thick, tiny ones and big ones. They look like the ordinary variegated cutworm. Across the road south from the station pasture, 80 acres of cultivated land fenced for pasture the last two years, has been cleared of all vegetation by the cutworms and is now absolutely bare. The worms have not bothered the small grains. They do not seem to be working in the roadways.

COLBY, contd.:

The corn plots are ready for planting as soon as the ground is dry enough. We have been in no hurry to plant on account of the cutworms. Ground squirrels, too, are more numerous this year.

Maximum temperature, 67°; minimum, 54°; precipitation, 1.01 inches.

HAYS:

Today closes another week of cloudy, damp weather, rain having occurred on three days.

Wind, accompanying the rains, caused heavy lodging of the wheat on all fallowed plots and more or less on the early tilled plots. Today, however, most of the wheat is straight, indicating a good recovery, and it really looks good except for a heavy infestation of red rust which perhaps is not serious. As tall and heavy as the growth is, it is surprising how many lodgings the wheat has been able to take with so little permanent injury. There are a few fields in this area in which considerable of the wheat is permanently lodged, and the straw is deteriorating as indicated by the odor from the wheat. On some of these fields there is a thin stand of surviving stalks fairly well headed. Most of these stalks, however, are of the "L" type (due to lodging) and the question at present is whether or not they will stand up until harvest. Perhaps the greatest weakness of the winter wheat is it's height. On most of the fields along the highways the wheat is as high as the fence.

Barley, oats, and spring wheat are for the most part headed and the prospects are good for an excellent yield. The rains have been much more favorable for these crops than for winter wheat.

The stand of alfalfa on the project looks fine, and there is no apparent reason why it should not become well established, providing insects do not interfere. The first crop of alfalfa on the commercial fields is being harvested. The yield is heavy.

Buffalo grass, mentioned in the last report as just emerging, is now up to a good stand and looks fine. The Forage Crop Division, with which we are cooperating, drilled the buffalo grass seed for us. Buffalo grass burrs were drilled in rows 20 inches apart.

Canada field peas have made a nice growth and are about ready to be turned under for green manure.

Row crop plots were cultivated for destruction of weeds. The ground is too wet at this time for tillage work.

During the last two weeks grasshoppers have been hatching in large numbers. Two applications of poison mash have been made around the alfalfa and buffalo grass plots, in roadways, and around the fence where most of the grasshoppers are hatching. It is hoped they may be destroyed before they migrate into the plots.

Maximum temperature, 87°; minimum, 55°; precipitation, 1.38 inches.

GARDEN CITY:

Three measurable rains during the week totaled 1.15 inches. This brought the May total up to 4.21 inches, with the average for the month of 2.68 inches. The total for the first five months is 8.80 inches and the average is 6.01 inches. The total thus far this year is above the average for the first six months. Thus, all the moisture received during June will be above average. Very little runoff has occurred from these rains.

GARDEN CITY,contd.:

Wheat prospects are excellent, although leaf rust has increased considerably this past week. Damage from the rust will probably not be so serious, since most of the wheat has fully headed. Stem rust has been reported southeast of here, but as yet none has been found on the station nor in this vicinity. Some hail was reported this week in this area but none fell on the station. Some farmers estimated hail damage to their wheat up to nearly 100 percent.

The station entomologist reports having found many young grasshoppers killed by a fungus, and that if warmer temperatures are received along with the present high humidity, death losses may become quite high.

Field work consisted of cultivating plots and alleyways, building up dikes on the Basin Lister Project, and hoeing weeds.

L.P.Reitz, Agronomy Department, Kansas State College was a station visitor.

Maximum temperature, 88°; minimum, 57°; precipitation, 1.15 inches.

TUCUMCARI:

May, with precipitation of 7.40 inches falling on 15 days, was the third wettest month on record. This year to date is the second wettest on record for the period.

The mean temperature was normal, without any very high temperatures. Much of the month was cloudy. Evaporation was extremely low.

Only 0.32 inch precipitation fell the past week, but the soil was so wet from preceding rains that only one day of field work could be performed. The coming week, weather permitting, a final field cultivation will be given nearly all row crop land, followed as rapidly as possible by planting. No station planting has been done aside from the corn and peanut variety test and the nursery planting of cotton, all planted May 29.

Ranges are excellent and improving daily, while the landscape is a mass of wildflowers. With precipitation the past five months exceeding the total annual precipitation of six of the past seven years, it is of course logical that such vegetation should astound dust bowl tired eyes.

Wheat farmers who see visions of the first bumper crop since 1931, with prices far above the 17¢ to 23¢ of that year, now are worrying about the danger of rust. Many have insured against hail, but the scattered reports concerning rust appearance have aroused a rare concern. A slight infestation appears to be quite general, but the majority of people do not think there is much danger of serious loss. Aside from wheat which was a total loss, perhaps 25 to 35 percent of the acreage seeded, the remaining acreage could readily average 20 bushels, while optimistic farmers estimate the county average, on harvested acreage, at 25 bushels.

Maximum temperature, 84°; minimum, 54°; precipitation, 0.32 inch.

DALHART:

It was possible to work only part of one day in the field this week. During the preceding week only a similar time was devoted to field work. No planting has been possible, and only a good start has been made on the seedbed preparation. If it does not rain in the meantime, it is believed that field work will be possible again by this coming Wednesday.

DALHART, contd.:

Measurable precipitation was received on five of the past seven days; the weekly rainfall totaled 2.19 inches. This brings the May rainfall to 9.91 inches, which is the greatest precipitation ever recorded for a calendar month. The precipitation for the year is now 15.41 inches; which is more than the annual rainfall in any of the preceding eight years. The precipitation for 1941 to date exceeds by more than 3 inches the former wettest similar period which was 1922. The 1941 precipitation is nearly 10 inches above the 34-year average, or about 280 percent of the average. Since October 1, 1940, the precipitation has amounted to 19.63 inches; this is the greatest precipitation ever received for this period, and it exceeds the previous high by more than 3 inches. During the past 39 days 11.69 inches have fallen on 22 days. The most peculiar part of this wet period is the rather startling fact that there has been a minimum of runoff. Fields actually showed run-off of consequence only one day this week. The canyon, which is a rather reliable indicator of run-off, has been impassible for 8 periods during this rainy cycle, but, except for one rise, they have been of short duration.

Since the trees have leafed out, it is apparent that there are additional branches to be removed on account of the November 1940 icestorm. A number of branches had the inner wood damaged during the weight of the ice, but they returned to near normal posture when the ice melted. With the weight of the leaves this injury is now apparent.

Maximum temperature, 84°; minimum, 51°; precipitation, 2.19 inches.

BIG SPRING:

Rainy weather continued this week when 1.11 inches was received on the 26th. This made a total of 4.89 inches for the month as compared with a normal of 2.66. The total for the first five months of this year is 13.08 inches, or nearly twice the normal for this period.

Station work has consisted entirely of planting when the fields were dry enough. This included planting cotton, kafir, corn, broomcorn, cowpeas, and peanuts in the rotations and the May 30 variety date of grain and forage sorghums. All increase fields were also planted. Winter wheat plots were harvested with the grain binder. This is the first time in several years when some or all of the plots did not have to be mowed on account of short straw. The plants this year were tall, varying from 36 to 40 inches, with heads seemingly well filled.

Maximum temperature, 95°; minimum, 60°; precipitation, 1.11 inches.

LAWTON: (two weeks ending May 31)

Rains amounting to 2.43 inches prevented any field work of consequence during the week ending May 24. Clear weather most of the time during the week ending the 31st was of material assistance to field operations, but a hard rain of 1.12 inches on the 31st and on June 1 sets all work back again.

Rotation plots of row crops are in a good state of cultivation. Sweetclover, 2 years old, was cut on the 29th. The average height was 57 inches. The first cutting of alfalfa on an increase field was a total loss because of the excessive rains.

All the winter barley, extensively lodged, has been harvested and a part of the winter oats varieties, where lodging was 100 percent in most instances, has also been harvested. About 1/3 of a field

LAWTON, contd.:
of volunteer oats, very extensively lodged has been harvested, probably not more than 2/3, maybe only 1/3 of this field will eventually be harvested. A very clean job of harvesting has been done so far by using extension guards on the binder. Spring seedings of oats have stood up well so far and maturity is approaching quite rapidly. Two varieties of wheat, Early Blackhull and Early Blackhull x Tenmarq were harvested May 31. Both varieties were lodged 90 percent. The presence of Black Chaff disease on wheat varieties is becoming more evident each day.

Planting of the chinch bug sorghum project was finally accomplished on the 29th and 31st. This planting was followed by a hard rain of 1.12 inches on the 31st and June 1. Emergence is uncertain.

A small-grain field day for farmers and county agents was held on the 26th. About 40 people were present.

Dr. Quisenberry, Mr. Rauchschwalbe, and Mr. Hubbard were recent Department visitors.

The May rainfall, recorded on 14 dates, amounted to 6.53 inches. The total for the year, including May 31 amounts to 15.64 inches. Maximum temperature, 90°;

WOODWARD:

There was no significant change in general weather conditions during the past week, threatening skies and occasional showers continuing to prevail. The rainfall in May was 8.46 inches, making it the wettest in station history. Precipitation from January 1 to date has totalled 17.86 inches, slightly more than twice the normal amount. In fact, since April 15, more rain was recorded than during the entire six months growing season of 1940. One noteworthy comment about the heavy rainfall has been the infrequent occurrence of excessive intensities, only two or three storm periods being attended by very rapid run-off.

Earlier planted row crops including corn, peanuts, and cotton were cultivated and cotton was thinned to proper stand. A rank growth of vetch was plowed under for green manure, and the hay yield from another plot will be much above average. Winter wheat appears to be filling quite well, and lodging has been less than expected thus far. There is a heavy infection of speckled leaf blotch, but with the advancing season little damage is anticipated. A trace of stem rust was observed for the first time. Height notes were taken on the DLA and Cereal small grain projects, the tallest wheat exceeding 48 inches. One rye variety in the nursery has attained a height of 68 inches. The present appearance of the experimental field with "chest" high plats in all directions is indeed a contrast to that of a year ago when short, weedy stands were the rule.

Harvest of radishes, lettuce, spinach, and spring onions from the vegetable garden indicates the quality of produce is fairly satisfactory, owing no doubt, to frequent showers and absence of extreme temperatures. It has not been necessary to water the irrigated garden thus far. Some tomatoes on plants set out April 1 under various kinds of protective covers are now about half grown. High water in the Spring Creek arboretum area on the 23rd inundated a number of plantings, and these are being uncovered in as far as possible. Notes on germination in the seedbeds and other work in that connection is in progress. Ornamentals now flowering include Coreopsis, Spiderwort, Skullcap, and numerous others. Catalpa trees have had a very showy bloom this year. The Smoketree have also been especially attractive.

WOODWARD, contd.:

Cultivation of land for the sorghum project and of various blocks in the forage and SCS tracts for cover crop plantings has been in progress when the surface was dry enough to permit work. A number of nurseries were also cultivated and miscellaneous hoeing done. Certain western wheatgrass plantings now fully headed have the appearance of fields of grain in stand and height. Some mature seed of Texas bluegrass has been collected in the increase nursery.

Maximum temperature, 91°; minimum, 62°; precipitation, 0.74 inch. Reservoir full, 19.4 feet.

PENDLETON:

The precipitation for May was the highest that has been recorded for that month in the history of the station. The total was 3.03 inches, whereas the average for the 12 years 1929-40 is only 0.77 inch.